

Remarks

Claims 1-25 are pending in the present application. Claims 11, 17-19, 21, 22, 24, and 25 are objected to. Claims 21-25 are rejected under 35 U.S.C. §112, first paragraph. Claims 1, 7-9, and 21-25 are rejected under 35 U.S.C. §103(a).

Claim 11 is cancelled.

Claim 17 is amended to insert coating after “method of.” Claim 21 is amended to replace “sulfide electroluminescent phosphor” with “an encapsulated or unencapsulated phosphor.” The antecedent basis for this amendment is found on page 3, ll. 1-3 of the Specification which states “It is still another object of the present invention to provide an improved electroluminescent composition that comprises either an encapsulated or an unencapsulated phosphor.” Claim 22 is amended to replace “zinc sulfide electroluminescent phosphor” with “zinc sulfide containing phosphor.” The antecedent basis for this amendment is found on p. 14, ll. 22-23 of the Specification. Finally, claim 25 is amended such that “phosphor” is replaced by “electroluminescent phosphor.” No new matter is added by these amendments.

A. Rejection Under 35 U.S.C. § 103(a)

Claims 11, 17-19, 21, 22, 24, and 25 are objected to.

Claim 11 is cancelled.

The Examiner has objected to claim 17 because the phrase “method of a substrate” is not clear. Claim 17 is amended to insert coating after “method of.” Accordingly, claim 17 now reads “method of coating a substrate” which is now clear.

Applicant does not intend to cancel claim 21, 22, 23, 24, and 25. The lines drawn through these claims were not produced by the Applicant.

B. Rejection Under 35 U.S.C. § 112

Claims 21-25 are rejected under 35 U.S.C. §112, first paragraph.

The Examiner has rejected claim 21, 22, 23, and 24 because the Specification does not provide enablement for any electroluminescent phosphor comprising a sulfide. Claim 21 is amended to replace “sulfide electroluminescent phosphor” with “an encapsulated or unencapsulated phosphor” which is found on page 3, ll. 1-3 of the Specification which states “It is still another object of the present invention to provide an improved electroluminescent composition that comprises either an encapsulated or an unencapsulated phosphor.” Claim 22 is amended to replace “zinc sulfide electroluminescent phosphor” with “zinc sulfide containing phosphor” is found on p. 14, ll. 22-23 of the Specification. Accordingly, amended claims 22 and 23 are now fully supported by the Specification. Applicant believes the Examiner rejection to claim 24 is incorrect since the component “electroluminescent phosphor” is supported throughout the Specification. Applicant believes that the Examiner meant to reject claim 23. Any potential rejection of claim 23 is also remedied by the amendment to independent claim 21.

The Examiner has rejected claim 25 because phosphors that are not electroluminescent phosphors are not enabled by the Specification. This is corrected by amended claim 25 in which “phosphor” is replaced by “electroluminescent phosphor.”

C. Rejection Under 35 U.S.C. § 103

Claims 1, 7-9, 21-23, and 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kameyama et al (5,076,963) in view of GB 1,1550,382.

The Examiner states that Kameyama discloses “compositions comprising an EL phosphor, such as ZnS:Cu, a photoinitiator and (meth)acrylate monomers, oligomers or prepolymers” while conceding that “isobornyl acrylate is not specifically mentioned.” (Office Action dated October 14, 2003, p. 3) The Examiner goes on to state that “GB '382 teaches the advantages of isobornyl acrylate as low volatility reactive diluent in radiation curable compositions” while not teaching the use of electroluminescent modifiers. (Office Action dated October 14, 2003, p. 3)

The Applicant respectfully disagrees with the Examiner’s analysis. The present invention provides a UV curable composition with improved long term stability and no significant amounts of volatile organic compounds. Specifically, Figure 1 of the application provides a plot of the light output from an electroluminescent lamp in which the output is seen to have leveled out after about 3 months of use. The advantages of using isobornyl acrylate as stated in GB '382 do not suggest such a phenomenon. Moreover, it is not at all obvious that isobornyl acrylate would be compatible with an electroluminescent phosphor. It may have been “obvious to try” to use isobornyl acrylate. However, “obvious to try” does not render an invention obvious under 35 U.S.C 103(a). Finally, neither Kameyama nor GB '382 stress the importance of using a composition which “does not contain any significant amount of volatile organic solvents that do not become incorporated in the coating after the electroluminescent composition is cured” as required by claim 1. Accordingly, independent claims 1 and 25 along with depended claims 7-9 and 21-23 are patentable over Kameyama et al (5,076,963) in view of GB 1,1550,382.

Claims 1, 8, 9, and 21-25 are rejected under 35 U.S.C. §103(a) as being unpatentable over deSouxa (4,684,353) in view of GB 1,1550,382.

The Examiner states that deSouxa “discloses compositions comprising acrylate monomers, a photoinitiator and a ZnS:Cu electroluminescent (EL) phosphor” while not specifically mentioning isobornyl acrylate. (Office Action dated October 14, 2003, p. 3) Again, the Examiner uses GB '382 to provide the use of isobornyl acrylate.

For the same reasons as set forth above, the Applicant respectfully disagrees with the Examiner's analysis. The present invention provides a UV curable composition with improved long term stability and no significant amounts of volatile organic compounds. Specifically, Figure 1 of the application provides a plot of the light output from an electroluminescent lamp in which the output is seen to have leveled out after about 3 months of use. The advantages of using isobornyl acrylate as stated in GB '382 do not suggest such a phenomenon. Moreover, it is not at all obvious that isobornyl acrylate would be compatible with an electroluminescent phosphor. It may have been "obvious to try" to use isobornyl acrylate. However, "obvious to try" does not render an invention obvious under 35 U.S.C 103(a). Finally, neither deSouxa nor GB '382 stress the importance of using a composition which "does not contain any significant amount of volatile organic solvents that do not become incorporated in the coating after the electroluminescent composition is cured" as required by claim 1. Accordingly, independent claims 1 and 25 along with depended claims 8, 9, and 21-24 are patentable over deSouxa et al (5,076,963) in view of GB 1,1550,382.

Conclusion

Applicant believes that all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested. If a telephone or video conference would help expedite allowance or resolve any additional questions, such a conference is invited at the Examiner's convenience.

The Examiner is authorized to charge any additional fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978 -- a duplicate of this paper is enclosed for that purpose.

Respectfully submitted,

Roy C. Krohn

By 

James W. Proscia

Reg. No. 47,010

Attorney/Agent for Applicant

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BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400
Fax: 248-358-3351